CLAIMS

1. A photodetector comprising:

(K × M × N) photodiodes $PD_{k,m,n}$ (K being an integer of no less than 2; k being integers of no less than 1 and no more than K; M being an integer of no less than 1; m being integers of no less than 1 and no more than M; N being an integer of no less than 2; and n being integers of no less than 1 and no more than N), each generating an electric charge by an amount corresponding to an intensity of light incident thereon;

(M × N) integrating circuits, one of each being provided in correspondence to K photodiodes $PD_{k,m,n}$ (k = 1 to K) among the (K × M × N) photodiodes $PD_{k,m,n}$ and each successively inputting and accumulating the electric charges generated at the K photodiodes $PD_{k,m,n}$ (k = 1 to K) and outputting a voltage that is in accordance with the amount of the accumulated electric charges; and

(M × N) filter circuits, one of each being provided in correspondence to each of the (M × N) integrating circuits and each reducing the thermal noise component contained in the voltage output from the corresponding integrating circuit and outputting the voltage after reduction of the thermal noise component.

2. The photodetector according to Claim 1, further comprising CDS circuits, each being arranged between said integrating circuit and said filter circuit, inputting the voltage output from the integrating circuit, and outputting a voltage expressing the fluctuation of the input voltage over a fixed time.

3. The photodetector according to Claim 1, further comprising A/D converters, each inputting the voltage output from said filter circuit,

performing A/D conversion on this voltage, and outputting a digital value that is in accordance with this voltage.

4. The photodetector according to Claim 1, wherein the (K × M × N) photodiodes $PD_{k,m,n}$ are arranged in M rows and (K × N) columns either two-dimensionally (when M = 2) or one-dimensionally (when M = 1), with each photodiode $PD_{k,m,n}$ being positioned at the position of the m-th row and (n + (k – 1)N)-th column.